		codon	a.a.	anticodon	tDNA	codon	a.a.	anticodon	tDNA	codon	a.a.	anticodon	tDNA	codon	a.a.	anticodon	tDNA
codon 1st letter	U	UUU	Phe	t-GAA	-	UCU	Ser	t-GGA	-	UAU	Tyr	qGU(ψ)A	-	UGU	Cys	t-GCA	-
		UUC			t-GAA (2)	UCC			t-GGA (2)	UAC			t-GTA (3)	UGC			t-GCA (1)
		UUA	Leu	cmnm5UmAA	t-TAA (1)	UCA		cmo5UGA	t-TGA (1)	UAA	STOP			UGA	STOP		
		UUG		mCAA	t-CAA (1)	UCG		t-CGA	t-CGA (1)	UAG	STOP			UGG	Trp	t-CCA	t-CCA (1)
	C	CUU	Leu	t-GAG	-	CCU	Pro	t-GGG	-	CAU	His	qGUG	-	CGU	Arg	t-ACG	t-ACG (4)
		CUC			t-GAG (1)	CCC			t-GGG (1)	CAC			t-GTG (1)	CGC		t-ICG	-
		CUA		cmo5UAG	t-TAG (1)	CCA		t-UGG	t-TGG (1)	CAA	Gln	cmnm5s2UUG	t-TTG (2)	CGA			-
		CUG		t-CAG	t-CAG (4)	CCG		t-CGG	t-CGG (1)	CAG		t-CUG	t-CTG (2)	CGG		t-CCG	t-CCG (1)
	A	AUU	Ile	t-GAU	-	ACU	Thr	t-GGU	-	AAU	Asn	qGUU	-	AGU	Ser	t-GCU	-
		AUC			t-GAT (3)	ACC			t-GGT (2)	AAC			t-GTT (4)	AGC			t-GCT (1)
		AUA		t-(k2C)AU	t-CAT (2)	ACA		cmo5UGU	t-TGT (1)	AAA	Lys	mnm5s2UUU	t-TTT (6)	AGA	Arg	mnm5UCU	t-TCT (1)
		AUG	Met	t-CAU/CAUi	t-CAT (2/4)	ACG		t-CGU	t-CGT (2)	AAG			-	AGG		t-CCU	t-CCT (1)
	G	GUU	Val	t-GAC	-	GCU	Ala	t-GGC	-	GAU	Asp	(gluq)GUC	-	GGU	Gly	t-GCC	-
		GUC			t-GAC (2)	GCC			t-GGC (2)	GAC			t-GTC (3)	GGC			t-GCC (4)
		GUA		cmo5UAC	t-TAC (5)	GCA		cmo5UGC	t-TGC (3)	GAA	Glu	mnm5s2UUC	t-TTC (4)	GGA		mnm5UCC	t-TCC (1)
		GUG			-	GCG			-	GAG			-	GGG		t-CCC	t-CCC (1)

k^2C	lysidine
cmnm5Um	5-carboxymethylaminomethyl-2′-O-methyluridin
mC	2′-O-methylcytidine
cmo5U	uridine 5-oxyacetic acid
q	queuosine
ψ	pseudouridine
cmnm5s2U	5-carboxymethylaminomethyl-2-thiouridine
mnm5s2U	5-methylaminomethyl-2-thiouridine
gluq	glutamyl-queuosine
mnm5U	5-methylaminomethyluridine

Figure S1 *E. coli* tRNA anticodon modification according to ”modomics”
Not all of isodecoder anticodons are equally modified.

		codon	a.a.	anticodon	tDNA	codon	a.a.	anticodon	tDNA	codon	a.a.	anticodon	tDNA	codon	a.a.	anticodon	tDNA
codon 1st letter	U	UUU	Phe	GmAA	–	UCU	Ser	t-AAG	t-AGA (11)	UAU	Tyr	t-GUA	–	UGU	Cys	t-GCA	–
		UUC			t-GAA (10)	UCC		t-IGA	–	UAC			t-GUA (8)	UGC			t-GCA (4)
		UUA	Leu	xUAA	t-UAA (7)	UCA		ncm5UGA	t-UGA (3)	UAA	STOP		(eRF1)	UGA	STOP	(eRF1)	
		UUG		m5CAA	t-CAA (10)	UCG		t-CGA	t-CGA (1)	UAG	STOP		(eRF1)	UGG	Trp	CmCA	t-CCA (6)
	C	CUU	Leu	t-GAG	–	CCU	Pro	t-AGG	t-AGG (2)	CAU	His	t-GUG	–	CGU	Arg	t-ACG	t-ACG (6)
		CUC			t-GAG (1)	CCC		t-IGG	–	CAC			t-GUG (7)	CGC		t-ICG	–
		CUA		t-UAG	t-UAG (3)	CCA		xUGG	t-UGG (10)	CAA	Gln	t-UUG	t-UUG (9)	CGA			–
		CUG			–	CCG			–	CAG		t-CUG	t-CUG (1)	CGG		t-CCG	t-CCG (1)
	A	AUU	Ile	t-AAU	t-AAU (13)	ACU	Thr	t-AGU	t-AGU (11)	AAU	Asn	t-GUU	–	AGU	Ser	t-GCU	–
		AUC		t-IAU	–	ACC		t-IGU	–	AAC			t-GUU (10)	AGC			t-GCU (4)
		AUA		U(ψ)AU(ψ)	t-UAU (2)	ACA		t-UGU	t-UGU (4)	AAA	Lys	mcm5s2UUU	t-UUU (7)	AGA	Arg	mcm5UCU	t-UCU (11)
		AUG	Met	t-CAU/CAUi	t-CAU (5/5)	ACG		t-CGU	t-CGU (1)	AAG		t-CUU	t-CUU (14)	AGG		t-CCU	t-CCU (1)
	G	GUU	Val	t-AAC	t-AAC (14)	GCU	Ala	t-AGC	t-AGC (11)	GAU	Asp	t-GUC	–	GGU	Gly	t-GCC	–
		GUC		t-IAC	–	GCC		t-IGC	–	GAC			t-GUC (16)	GGC			t-GCC (16)
		GUA		ncm5UAC	t-UAC (2)	GCA		t-UGC	t-UGC (5)	GAA	Glu	mcm5s2UUC	t-UUC (14)	GGA		xUCC	t-UCC (3)
		GUG		t-CAC	t-CAC (2)	GCG			–	GAG		t-CUC	t-CUC (2)	GGG		t-CCC	t-CCC (2)

Gm	2′-O-methylguanosine
m5	5-methylcytidine
ψ	pseudouridine
ncm5U	5-carbamoylmethyluridine
mcm5s2	5-methoxycarbonylmethyl-2-thiouridine
Cm	methylcytidine
mcm5	5-methoxycarbonylmethyluridine
x	unknown modification

Figure S2 *S. cerevisiae* tRNA anticodon modification according to ”modomics”
Not all of isodecoder anticodons are equally modified.